

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: James D. Linder
Serial No.: 10/034,491
Filing date: December 27, 2001
Group Art Unit: 2174
Confirmation No.: 1247
Title: COMPUTER AIDED DESIGN SYSTEM HAVING
BUSINESS PROCESS ATTRIBUTES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appeal Brief

Appellant has appealed to the Board of Patent Appeals and Interferences from the decision of the Examiner finally rejecting Claims 1-16 and 18-24, as evidenced in the Final Office Action mailed July 14, 2006. Appellant filed a Notice of Appeal on September 13, 2006 along with a Pre-Appeal Brief Request for Review. The Pre-Appeal Panel in a decision of November 7, 2006, determined that this Application should Proceed to Appeal. Appellant respectfully submits this Appeal Brief with the statutory fee of \$500.00.

Table of Contents

	<u>Page</u>
Real Party In Interest	3
Related Appeals and Interferences	4
Status of Claims	5
Status of Amendments	6
Summary of Claimed Subject Matter	7
Ground of Rejections to be Reviewed on Appeal	9
Argument	10
I. Overview	10
II. Standards	10
III. The PTO has Failed to Provide the Requisite <i>Prima Facie</i> Showing of Each and Every Element as Required under 35 U.S.C. §102 in Rejecting Claims 1, 3, 7, 9, 12, 14, 18, 20, and 24	11
IV. The PTO has Failed to Provide the Requisite <i>Prima Facie</i> Showing of Each and Every Element as Required under 35 U.S.C. §103 in Rejecting Claims 2, 4, 8, 10, 13, 15, 19, and 21	13
V. The PTO has Failed to Provide the Requisite <i>Prima Facie</i> Showing of Each and Every Element as Required under 35 U.S.C. §103 in Rejecting Claims 5, 6, 11, 16, 22, and 23	14
Conclusion	15
Appendix A: Claims on Appeal	16
Appendix B: Evidence	23
Appendix C: Related Proceedings	24

Real Party In Interest

The present Application was assigned to UGS PLM Solutions Inc., a Delaware corporation, as indicated by an assignment from Electronic Data Systems Corporation to UGS PLM Solutions Inc. as recorded on February 4, 2004 in the Assignment Records of the United States Patent and Trademark Office at Reel 014307, Frame 0325.

Related Appeals and Interferences

There are no known appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

Status of Claims

Claims 1-16 and 18-24 are pending in this application and all stand rejected under a Final Office Action mailed July 14, 2006. Claim 17 has been cancelled without prejudice or disclaimer. Appellant presents Claims 1-16 and 18-24 for appeal. Appendix A shows appealed Claims 1-16 and 18-24.

Status of Amendments

The Examiner has entered the amendments that were submitted before the Final Office Action mailed July 14, 2006. No further amendments have been submitted.

Summary of Claimed Subject Matter

FIGURE 1 of Appellant's specification is a block diagram of a design system 10 that includes a user interface 12, a digital model data set 14, a smart model attribute data set 16, a business process attribute data set 18, and a knowledge base data set engine 20. User interface 12 interacts with digital model data set 14. Digital model set 14 comprises information defining a physical structure of components of an assembly, as an example, in a computer aided design environment. Digital model data set 14 may comprise data that specifies the size and orientation of various components within a more complex mechanical assembly. Digital model data set 14 receives and is linked to additional information from smart model attribute data set 16. Smart model attribute data set 16 also interacts with user interface 12. Smart model attribute data set 16 provides additional information that is linked to various features specified within digital model data set 14. For example, digital model data set 14 may comprise the dimensions and orientations of a particular bracket within a complex mechanical assembly. In this example, smart model attribute data set 16 may comprise information associated with the type of material used to construct the bracket as well as tolerance information associated with the dimensions of the bracket and process information, such as, for example, heat treatments, finishes, specific coatings, lubricants or other processing used to construct the bracket. *Page 5, lines 1 - 21.*

Business process attribute data set 18 further augments the digital model data set 14. Business process attribute data set 18 comprises attributes that are related to business processes associated with the components within the assembly. For example, a business process attribute stored within business process attribute data set 18 may comprise an information address field, a safety information field, a quality information field, or a revision information field. *Page 5, line 22 - Page 6, line 9.*

Business process attribute data set 18 and the smart model attribute data set 16 are enhanced by being automatically inferentially populated through the operation of knowledge base data set engine 20. Knowledge base data set engine 20 receives information from uniform resource locators 22, local data bases 24, and external data bases that supply information to either the smart model attribute data set 16 or the business process attribute data set 18 during the design of the digital model data set 14. For example, if a designer specifies that a particular bracket within an assembly is to be constructed using a particular type of steel, knowledge base data set engine 20 could automatically inferentially create and link a smart model attribute defining a particular heat treatment process that is required or

suggested with that type of steel and could also inferentially create and link a business process attribute that any use of the required or suggested process indicates that the component is critical to quality and is a major safety concern. In this manner, a designer who may or may not know of the various structural and mechanical options available to him and the associated business processes can benefit from the information managed by the knowledge base data set engine 20 which will inferentially link structures designed in the digital model data set 14 during the design process to applicable smart model and business process attributes. *Page 6, lines 12 - 29.*

FIGURE 2 shows examples of business process attributes such as a quality information display indicator 38 and a revision display indicator 40 associated with surface 32 that may be stored in business process attribute data set 18 of FIGURE 1. Quality information may comprise various levels of information such as, for example, information specifying that a particular process, feature, or element may be critical to quality, a key characteristic or of no concern to quality. These could be represented by quality display instances of "CTQ" for critical to quality, "KC" for key characteristic or be left blank if the feature or process is not a quality concern. Similarly, the revision information associated with revision display indicator 40 may communicate a revision number or other identifier to a user of the system 10. In this manner, a user can be made to understand that a particular process or feature within the digital model data set 14 was changed during a particular revision. In the example shown in FIGURE 2, the revision display indicator 40 specifies that surface 32 or its associated processes were changed in Revision 2. *Page 8, lines 7 - 19.*

FIGURE 2 also shows a safety indicator indicated generally at 36. Surface 32 and, specifically, the process defining the application of lubricant to surface 32 has been identified in the example shown in FIGURE 2 as being a critical safety concern. A safety business process attribute may have various values such as, for example, the attribute may be a "critical", "major", or "minor" concern to safety. The display element 36 shown in FIGURE 2 illustrates one potential method of communicating this safety information to a user of the system. For example, a critical safety concern might result in a display of a safety level 1 in a triangle, a major safety concern could result in the result of a safety level 2 in a triangle and a minor safety concern could result in the display of a safety level 3 in a triangle. *Page 7, line 29 - Page 8, line 6.*

Ground of Rejections to be Reviewed on Appeal

Appellant requests that the Board review the following rejections:

1. Claims 1, 3, 7, 9, 12, 14, 18, 20, and 24 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,625,798 to Badders et al. ("*Badders*");
2. Claims 2, 4, 8, 10, 13, 15, 19, and 21 under 35 U.S.C. § 103(a) as being unpatentable over *Badders* in view of U.S. Patent No. 6,295,513 to Thackston ("*Thackston*"); and
3. Claims 5, 6, 11, 16, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentable over *Badders* and *Thackston* in view of U.S. Publication No. 2002/0026385 issued to McCloskey et al ("*McCloskey*").

Argument

Appellant has appealed to this Board from the decision of the Examiner, contained in a Final Office Action mailed July 14, 2006 ("Final Office Action"), finally rejecting Claims 1-16 and 18-24. Appellant filed a Notice of Appeal and Pre-Appeal Brief Request for Review on September 13, 2006. Appellant received a Notice of Panel Decision from Pre-Appeal Brief Review issued on November 7, 2006 stating that the appeal is to proceed to the Board of Patent Appeals and Interferences. Appellant respectfully submits this Appeal Brief for consideration of the Board.

I. Overview

Independent Claims 1, 3, 12, and 18 stand rejected under under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,625,798 to Badders et al. ("*Badders*"). Appellant respectfully submits that these rejections are improper and should be reversed by the Board for the reasons described in section IIIA of this Appeal Brief. If the Board agrees, then all claims are allowable. In sections IIIB - IIIC, Appellant presents additional respective reasons as to why independent Claims 12 and 3 are allowable. In sections IV and V, Appellant presents additional respective reasons as to why particular dependent claims are allowable.

II. Standards

A. 35 U.S.C. §102

With regard to 35 U.S.C. § 102 "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); M.P.E.P. § 2131. In addition, "[t]he identical invention must be shown in as complete detail as contained in the . . . claim." M.P.E.P. § 2131 citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Furthermore, "[t]he elements must be arranged as required by the claim." *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990); M.P.E.P. § 2131.

B. 35 U.S.C. §103(a)

With regard to 35 U.S.C. § 103, "the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. § 2142.

III. The PTO has Failed to Provide the Requisite *Prima Facie* Showing of Each and Every Element as Required under 35 U.S.C. §102 in Rejecting Claims 1, 3, 7, 9, 12, 14, 18, 20, and 24

The Final Office Action rejected Claims 1, 3, 7, 9, 12, 14, 18, 20, and 24 under 35 U.S.C. § 102(b) as being anticipated by *Badders*. Appellant traverses this rejection.

A. *Badders* does not disclose displaying business process attribute display instances linked to the displayed features within the digital model data set

Claim 12 is allowable at least because *Badders* fails to disclose “displaying business process attribute display instances associated with business process attributes linked to the displayed features within the digital model data set.” The Final Office Action points to Column 3, lines 32-37 of *Badders* in rejecting this claim. Appellant respectfully submits that this rejection is improper because *Badders* does not disclose displaying business process attribute display instances linked to displayed features within a digital model data set. The cited portion of *Badders* merely discloses extracting attribute data in a spreadsheet after the drawing is completed. Simply put, *Badders* teaches a one-way extraction of attribute data from a CAD drawing to database files after the user finishes the CAD drawing, but does not disclose displaying business process attribute display instances linked to the displayed features, as illustrated in Column 4, line 65 - Column 5, line 13 of *Badders*:

When the user has finished drawing the CAD drawing using input device 58 and CAD software 56, the database files 52 are generated using processor 50 by extracting the attributes included in the CAD blocks of memory 54 based on the drawing designed using the CAD software 56. In effect, the graphical attribute information is appended into the corresponding equipment database file. Therefore, the database files 52 include a reflection of what is included in the CAD software graphics file with additional attribute information relating to each of the components of the drawing. Processor 50 then translates each of the database files 52 into an output file 60 such as a Lotus.RTM. file.

For at least these reasons, Claim 12 is and its dependents are allowable.

Claims 1, 3, and 18 are each allowable for analogous reasons, as are all the claims depending therefrom. Claims 1, 3, and 18 each recite “a business process attribute data set linked to the digital model data set . . . such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user.” As discussed above, the database extraction process disclosed in *Badders* does not teach or suggest a business process attribute data set linked to the digital model data set such that

users are displayed business process attribute display elements when a mechanical component is displayed to the user. For at least these reasons, Claims 1, 3, and 18 are allowable, as are all claims depending therefrom.

B. *Badders* does not disclose automatically inferentially applying business process attributes

Claim 12 is allowable also at least because *Badders* does not teach or suggest “automatically inferentially applying business process attributes to features within the digital model data set.” The Final Office Action relies on Column 6, lines 41-49 in rejecting this claim. Appellant respectfully submits that this rejection is improper because *Badders* does not disclose automatically inferentially applying business process attributes. Rather, the cited portion merely discloses a database file capable of storing attributes, but not automatically inferentially applying attributes. For example, *Badders* explicitly states that the database file is initially empty. *See Badders*, Column 4 lines 12-13. Next, *Badders* indicates that attribute information relating to components is **entered manually** by a user of the CAD software. *See Badders*, Column 4 lines 57-65. However, no mention is made of automatically inferentially applying attributes, especially business process attributes as recited by Claim 12, nor does the Final Office Action specifically identify this limitation. For at least this reason, Claim 12 is allowable as are all the claims depending therefrom.

C. *Badders* does not disclose safety information defining a safety level parameter

Claim 3 is allowable also at least because *Badders* does not teach or suggest elements within a digital model data set linked to business process attributes, wherein the business process attributes comprise “safety information defining a safety level parameter associated with a component represented in the digital model data set.” The Final Office Action relies on the mere mention of OSHA data at Column 2 line 45 of *Badders* in rejecting this claim. Appellant respectfully submits that this rejection is improper because this portion of *Badders* does not show a business process attribute that comprises safety information defining a safety level parameter. Clearly, OSHA data are not safety level parameters, even if it is contended that this information relates to safety. For at least this reason, Claim 3 is allowable as are all the claims depending therefrom.

IV. The PTO has Failed to Provide the Requisite *Prima Facie* Showing of Each and Every Element as Required under 35 U.S.C. §103 in Rejecting Claims 2, 4, 8, 10, 13, 15, 19, and 21

The Final Office Action rejected Claims 2, 4, 8, 10, 13, 15, 19, and 21 under 35 U.S.C. § 103(a) as being unpatentable over *Badders* in view of U.S. Patent No. 6,295,513 to Thackston (“*Thackston*”). Appellant traverses this rejection.

A. The cited references do not disclose quality level information

Claim 13 is allowable also at least because the cited references do not teach or suggest displaying business process attribute display instances associated with business process attributes linked to the displayed features within the digital model data set, wherein the business process attributes comprise “a quality information attribute and wherein the business process attribute display instance specifies quality level information.” The Final Office Action concedes that *Badders* does not teach quality level information. See Final Office Action, Page 5. Rather, the Final Office Action cites Column 16, lines 34-51 of *Thackston* in rejecting this claim. Appellant respectfully submits that this rejection is improper because *Thackston* does not disclose quality level information. Instead, the cited portion of *Thackston* generally teaches associating a name of a manufacturing standard with a graphical entity. For example, the name of the manufacturing standard may be a Department of Defense document identifier, such as MIL-STD-5556.8. See *Thackston*, Column 16, lines 36-46. However, the name of a manufacturing standard and a quality level are not the same thing. Rather, a quality level refers to various levels of information such as, for example, information specifying that a particular process, feature, or element may be critical to quality, a key characteristic or of no concern to quality. See *Specification*, Page 8, lines 7-13. For at least this reason, Claim 13 is allowable as are all the claims depending therefrom. In addition, Claims 2, 8, and 19 are each allowable for analogous reasons, as are all the claims depending therefrom.

B. The cited references do not disclose revision information associated with features within the digital model data set

Claim 15 is allowable also at least because the cited references do not teach or suggest displaying business process attribute display instances associated with business process attributes linked to the displayed features within the digital model data set, wherein the business process attributes specify “revision information associated with the feature to which the revision information business attribute is linked.” The Final Office Action relies

on *Thackston's* Column 15, lines 28-45 in rejecting this claim. Appellant respectfully submits that this rejection is improper because *Thackston* teaches storing a version number for a digital model document. For example, *Thackston* describes that version numbers of documents are maintained as part of *Thackston's* electronic document control. See *Thackston*, Column 14 line 65 - Column 15 line 3 and Column 16, lines 1-4. However, at no point does *Thackston* disclose displaying revision information associated with features within the digital model data set. For at least this reason, Claim 15 is allowable as are all the claims depending therefrom. In addition, Claims 4, 10, and 21 are each allowable for analogous reasons, as are all the claims depending therefrom.

V. The PTO has Failed to Provide the Requisite *Prima Facie* Showing of Each and Every Element as Required under 35 U.S.C. §103 in Rejecting Claims 5, 6, 11, 16, 22, and 23

The Final Office Action rejected Claims 5, 6, 11, 16, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentable over *Badders* and *Thackston* in view of U.S. Publication No. 2002/0026385 issued to McCloskey et al ("*McCloskey*"). Appellant traverses this rejection.

Claim 5 is allowable also at least because the cited references do not teach or suggest elements within a digital model data set linked to business process attributes, wherein the business process attributes comprise "an information address attribute . . . related to a component associated with data within the digital model data set." The Final Office Action concedes that this limitation is not shown by *Badders - Thackston*. See Final Office Action, Page 6. Instead, the Final Office Action cites Paragraph 38 of *McCloskey* in rejecting this claim. Appellant respectfully submits that this rejection is improper because the cited portion of *McCloskey* merely discloses a file address for a displayed CAD drawing. For example, *McCloskey* describes embedding a file address to a CAD drawing using standard features of AutoCAD.RTM. See *McCloskey*, Paragraph 59. However, at no point does *McCloskey* teach or suggest an information address attribute related to a component within the digital model data set. For at least this reason, Claim 5 is allowable as are all the claims depending therefrom. In addition, Claims 11, 16, and 22 are each allowable for analogous reasons, as are all the claims depending therefrom.

Conclusion

Appellant has demonstrated that the present invention, as claimed, is clearly distinguishable over the prior art cited by the Examiner. Therefore, Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of Claims 1-16 and 18-24 and instruct the Examiner to allow Claims 1-16 and 18-24.

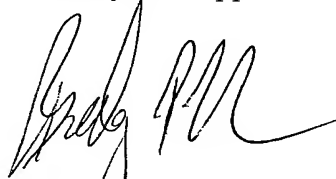
The Commissioner is hereby authorized to charge **\$500.00** to cover the Appeal Brief fee under 37 C.F.R. §.1.17(b) to Deposit Account No. 02-0384 of Baker Botts L.L.P.

The Commissioner is hereby authorized to charge any extra fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.

Attorneys for Appellant

A handwritten signature in black ink, appearing to read 'Bradley P. Williams', is written over the printed name.

Bradley P. Williams
Reg. No. 40,227

Date: 12/5/06

Correspondence Address:

Customer Number: **46629**

Appendix A: Claims on Appeal

1. (Previously Presented) A data processing system, comprising:
 - a user interface operable to display information to a user and to receive commands from a user accessing a digital model data set;
 - a digital model data set comprising data associated with the form of mechanical structures; and
 - a business process attribute data set linked to the digital model data set such that various elements within the digital model data set are linked to business process attributes within the business process attribute data set such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user; andwherein the business process attribute comprises one of:
 - quality information defining a quality level parameter associated with a component represented in the digital model data set;
 - safety information defining a safety level parameter associated with a component represented in the digital model data set;
 - revision information defining a revision parameter associated with a component represented in the digital model data set; and
 - an information address attribute comprising a network address associated with information related to a component associated with data within the digital model data set.
2. (Original) The data processing system of Claim 1 wherein the business process attribute comprises quality information defining a quality level parameter associated with a component represented in the digital model data set.

3. (Previously Presented) A data processing system, comprising:
a user interface operable to display information to a user and to receive commands from a user accessing a digital model data set;
a digital model data set comprising data associated with the form of mechanical structures;
a business process attribute data set linked to the digital model data set such that various elements within the digital model data set are linked to business process attributes within the business process attribute data set such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user; and
wherein the business process attribute comprises safety information defining a safety level parameter associated with a component represented in the digital model data set.

4. (Original) The data processing system of Claim 1 wherein the business process attribute comprises revision information defining a revision parameter associated with a component represented in the digital model data set.

5. (Original) The data processing system of Claim 1 wherein the business process attribute comprises an information address attribute comprising a network address associated with information related to a component associated with data within the digital model data set.

6. (Previously Presented) The data processing system of Claim 5 wherein the information address attribute comprises a hypertext link address that when displayed to a user of the system and activated by the user of a system will result in the activation of a browser program which is operable to retrieve information stored at the information attribute hypertext link address.

7. (Original) The data processing system of Claim 1 and further comprising a knowledge base data set engine coupled to and operable to access various knowledge base data sets, the knowledge base data set engine operable to inferentially apply business process attributes to features within the digital model data set responsive to information linked to such features within the knowledge base data sets accessible to the knowledge base data set engine.

8. (Original) The data processing system of Claim 7 wherein the knowledge base data set engine is operable to automatically inferentially apply a quality information business process attribute to a feature included within the digital model data set.

9. (Original) The data processing system of Claim 7 wherein the knowledge base data set engine is operable to automatically inferentially apply a safety information business process attribute to a feature included within the digital model data set.

10. (Original) The data processing system of Claim 7 wherein the knowledge base data set engine is operable to automatically inferentially apply a revision information business process attribute to a feature included within the digital model data set.

11. (Original) The data processing system of Claim 7 wherein the knowledge base data set engine is operable to automatically inferentially apply an information address link attribute to a feature included within the digital model data set.

12. (Previously Presented) A method of operating a digital design system comprising:

defining digital model data set information specifying the structure of components within an assembly;

defining business process attributes linked to particular features specified within the digital model data set;

displaying instances of features within the digital model data set which are associated with such business process attributes;

displaying business process attribute display instances associated with business process attributes linked to the displayed features within the digital model data set; and

further comprising automatically inferentially applying business process attributes to features within the digital model data set through the operation of an automated knowledge base data set engine operable to store associations between potential features which may be used in digital model data sets and inferred business process attributes associated with such features.

13. (Original) The method of Claim 12 wherein the business process attribute comprises a quality information attribute and wherein the business process attribute display instance specifies quality level information associated with the feature to which the quality information business attribute is linked.

14. (Original) The method of Claim 12 wherein the business process attribute comprises a safety information attribute and wherein the business process attribute display instance specifies safety level information associated with the feature to which the safety information business attribute is linked.

15. (Original) The method of Claim 12 wherein the business process attribute comprises a revision information attribute and wherein the business process attribute display instance specifies revision information associated with the feature to which the revision information business attribute is linked.

16. (Original) The method of Claim 12 wherein the business process attribute comprises an information source link and wherein the business process attribute display instance is operable, when activated by a user, to access a network address at which information is stored that is associated with the feature to which the information source link is linked.

17. (Cancelled)

18. (Original) A data processing system, comprising:
a user interface operable to display information to a user and to receive commands from a user accessing a digital model data set;
a digital model data set comprising data associated with the form of mechanical structures;
a business process attribute data set linked to the digital model data set such that various elements within the digital model data set are linked to business process attributes within the business process attribute data set such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user; and
a knowledge base data set engine coupled to and operable to access various knowledge base data sets, the knowledge base data set engine operable to inferentially apply business process attributes to features within the digital model data set responsive to information linked to such features within the knowledge base data sets accessible to the knowledge base data set engine.

19. (Original) The data processing system of Claim 18 wherein the business process attribute comprises quality information defining a quality level parameter associated with a component represented in the digital model data set.

20. (Original) The data processing system of Claim 18 wherein the business process attribute comprises safety information defining a safety level parameter associated with a component represented in the digital model data set.

21. (Original) The data processing system of Claim 18 wherein the business process attribute comprises revision information defining a revision parameter associated with a component represented in the digital model data set.

22. (Original) The data processing system of Claim 18 wherein the business process attribute comprises an information address attribute comprising a network address associated with information related to a component associated with data within the digital model data set.

23. (Previously Presented) The data processing system of Claim 22 wherein the information address attribute comprises a hypertext link address that when displayed to a user of the system and activated by the user of a system will result in the activation of a browser program which is operable to retrieve information stored at the information attribute hypertext link address.

24. (Previously Presented) The data processing system of Claim 1 wherein the business process attribute comprises safety information defining a safety level parameter associated with a component represented in the digital model data set.

Appendix B: Evidence

NONE

Appendix C: Related Proceedings

NONE